In The Claims

Please amend the claims as follows:

1. (Canceled)

2. (Previously presented) A satellite positioning receiver capable of receiving at least three positioning signals, comprising:

a navigation processor that processes the at least three positioning signals and determines at least three code phases; and

a location determined from initial digital terrain elevation data used to calculate a solution with the at least three code phases and an altitude equation derived from the initial digital terrain elevation data, where the solution further includes:

a horizontal error ellipse parameter in the altitude equation that forms an error ellipse having a major axis and a minor axis that corresponds to the altitude error;

a plurality of points along the major axis and the minor axis that form a grid of grid points;

a two-dimensional polynomial surface fit over the grid points; and

a memory that contains digital terrain elevation data at the grid points.

3. (Previously presented) The satellite positioning receiver of claim 2, further including:

a server that receives a plurality of satellite code phases where each of the satellite code phases is associated with a satellite position system signal over a wireless network; and

a controller in the server that accesses the initial digital terrain data in order to determine a solution.

4. (Previously presented) The satellite positioning receiver of claim 2, where the initial digital terrain elevation data is retrieved from the memory in response to receipt of a signal other than the at least three positioning signals.

5. (Original) The satellite positioning receiver of claim 2, wherein the digital terrain elevation data in the memory is NIMA (DTED) level 0 digital mean elevation data.

6. (Original) The satellite positioning receiver of claim 2, where the digital terrain elevation data in the memory is GTOPO30 Global Elevation data.

7. (Previously presented) The satellite positioning receiver of claim 2, further including:

a maximum residual error in the polynomial surface fit over the grid points utilized to determine whether the error is below a predetermined threshold.

8. (Original) The satellite positioning receiver of claim 7, where the predetermined threshold is 100 meters.

9. (Previously presented) The satellite positioning receiver of claim 2, where the navigation processor is a processor located in a server.

10. (Previously presented) A method of determining the location of a receiver in receipt of at least three positioning signals, comprising:

identifying a reference location with the at least three positioning signals;

retrieving an initial height;

determining an average height along with an average height error from the initial height;

deriving at least three simultaneous equations associated with the at least three positioning signals;

solving the at least three simultaneous equations with the average height and the average height error that results in a position and a corresponding horizontal error ellipse;

fitting a two-dimensional polynomial to the corresponding horizontal error ellipse; and

solving the at least three simultaneous equations and the two-dimensional polynomial that results in an altitude of the satellite positioning receiver.

11. (Original) The method of claim 10, where determining an average height further includes:

identifying one of a minimum height and a maximum height; and

setting the height error equal to the absolute value of the difference between the one of the minimum height and the maximum height and the average height.

12. (Previously presented) The method of claim 10, where retrieving an initial height further includes:

transmitting a plurality of code phases to a server where each of the code phases is associated with each of the positioning signals; and

accessing digital terrain data stored in a memory to retrieve the initial height.

13. (Original) The method of claim 12, wherein the wireless network is a cellular communication network.

14. (Original) The method of claim 10, where retrieving an initial height further includes:

receiving the initial height from a memory located within the satellite positioning receiver.

15. (Previously presented) The method of claim 10, further including:

acquiring another height using variables from the two dimensional polynomial; and

comparing the difference between the other height and altitude to a predetermined threshold.

16. (Original) The method of claim 15, where the predetermined threshold is 100 meters.

17. (Original) The method of claim 10, where the receiver is located in a server.

18. (Previously presented) A satellite positioning receiver apparatus in receipt of at least three positioning signals, comprising:

means for identifying a reference location with the at least three positioning signals;

means for retrieving an initial height;

means for determining an average height along with an average height error from the initial height;

means for deriving at least three simultaneous equations associated with the at least three positioning signals;

means for solving the at least three simultaneous equations with the average height and the average height error that results in a position and a corresponding horizontal error ellipse;

means for fitting a two-dimensional polynomial to the corresponding horizontal error ellipse; and

means for solving the at least three simultaneous equations and the two-dimensional polynomial that results in an altitude of the satellite positioning receiver.

19. (Original) The apparatus of claim 18, wherein the determining an average height means further includes:

means for identifying one of a minimum height and a maximum height; and

means for setting the height error equal to the absolute value of the difference between the one of the minimum height and the maximum height and the average height.

20. (Original) The apparatus of claim 18, wherein the means for retrieving an initial height further includes:

means for receiving the initial height from a server located in a wireless network.

21. (Original) The apparatus of claim 20, wherein the wireless network is a cellular communication network.

22. (Original) The apparatus of claim 18, wherein the means for retrieving an initial height further includes:

means for receiving the initial height from a memory located within the satellite positioning receiver.

23. (Previously presented) The apparatus of claim 18, further including:

means for acquiring another height using variables from the two dimensional polynomial; and

means for comparing the difference between the other height and altitude to a predetermined threshold.

24. (Original) The apparatus of claim 23, where the predetermined threshold is 100 meters.

25. (Previously presented) A machine-readable signal bearing medium for satellite positioning receiver apparatus containing a plurality of machine-readable signals, comprising:

means for identifying a reference location upon receipt of at least three positioning signals;

means for retrieving an initial height;

means for determining an average height along with an average height error from the initial height;

means for deriving at least three simultaneous equations associated with the at least three positioning signals;

means for solving the at least three simultaneous equations with the average height and the average height error that results in a position and a corresponding horizontal error ellipse;

means for fitting a two-dimensional polynomial to the corresponding horizontal error ellipse; and

means for solving the at least three simultaneous equations and the two-dimensional polynomial that results in an altitude of the satellite positioning receiver.

26. (Original) The machine-readable signal bearing medium of claim 25, wherein the determining an average height means further includes:

means for identifying one of a minimum height and a maximum height; and

means for setting the height error equal to the absolute value of the difference between the one of the minimum height and the maximum height and the average height.

27. (Original) The machine-readable signal bearing medium of claim 25, wherein the means for retrieving an initial height further includes:

means for receiving the initial height from a server located in a wireless network.

28. (Original) The machine-readable signal bearing medium of claim 27, wherein the wireless network is a cellular communication network.

29. (Original) The machine-readable signal bearing medium of claim 25, wherein the means for retrieving an initial height further includes:

means for receiving the initial height from a memory.

30. (Previously presented) The machine-readable signal bearing medium of claim 25, further including:

means for acquiring another height using variables from the two-dimensional polynomial; and

means for comparing the difference between the other height and altitude to a predetermined threshold.

31. (Original) The machine-readable signal bearing medium of claim 30, where the predetermined threshold is 100 meters.

32.-33. (Canceled)

34. (Previously presented) A server, comprising:

a transceiver that receives a plurality of satellite code phases;

a memory with digital terrain elevation data;

a controller that processes the plurality of code phases and accesses the digital terrain data in memory with an initial height to determine a location indicated by the plurality of satellite codes and the digital terrain data;

a message containing the location data sent from the transceiver;

a horizontal error ellipse parameter in an altitude equation that forms an error ellipse having a major axis and a minor axis that corresponds to an altitude error about the initial height;

a plurality of points along the major axis and the minor axis that form a grid of grid points that the controller accesses the digital terrain elevation data in memory at the grid points; and

a two-dimensional polynomial surface fit over the grid points.

35. (Previously presented) The satellite positioning receiver of claim 2, wherein the solution further includes an initial height taken from a height value in the neighborhood of a pseudolite.

36. (Currently Amended) The satellite positioning receiver of claim 35, wherein the pseudolite is ~~a base station~~ able to communicate with a wireless device.

37. (Previously presented) The satellite positioning receiver of claim 10, wherein the initial height is taken from a height value in the neighborhood of a pseudolite.

38. (Currently Amended) The satellite positioning receiver of claim 37, wherein the pseudolite is ~~a base station~~ able to communicate with a wireless device.

39. (Previously presented) The satellite positioning receiver of claim 18, wherein the initial height is taken from a height value in the neighborhood of a pseudolite.

40. (Currently Amended) The satellite positioning receiver of claim 39, wherein the pseudolite is ~~a base station~~ able to communicate with a wireless device.

41. (Previously presented) The satellite positioning receiver of claim 25, wherein the initial height is taken from a height value in the neighborhood of a pseudolite.

42. (Currently Amended) The satellite positioning receiver of claim 41, wherein the pseudolite is ~~a base station~~ able to communicate with a wireless device.

43. (Previously presented) The satellite positioning receiver of claim 34, wherein the initial height is taken from a height value in the neighborhood of a pseudolite.

44. (Currently Amended) The satellite positioning receiver of claim 43, wherein the pseudolite is ~~a base station~~ able to communicate with a wireless device.